

Independent Community Empowerment Program to Address Non-Communicable Disease Problems in Coastal Areas of Pekanbaru City

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Abstract

The purpose of this community service is to make efforts to prevent the spread of non-communicable diseases. The formulation of the problem in this study is how to conduct early detection (screening) of health, how to increase the knowledge and ability of the Sri Meranti Village Community in overcoming non-communicable disease health problems, and how to empower the community in overcoming and preventing NCD problems that occur at home or in the neighborhood. The research method used is the prevention method by providing education related to what non-communicable diseases are and how to prevent them. The results obtained were an increase in community knowledge related to non-communicable diseases worth 31.41. It is hoped that this program, which has shown success, can be continued so that the number of non-communicable diseases can decrease in the community.

A. Introduction

Non-communicable diseases (NCDs), account for 71% of global mortality, killing 36 million people per year (Chironda et al., 2023). About 80% of these deaths occur in middle- and low-income countries. 73% of deaths are currently caused by non-communicable diseases, 35% of which are due to heart and vascular disease, 12% by cancer, 6% by chronic respiratory disease, 6% by diabetes, and 15% by other NCDs (Mancia et al., 2023). NCDs have become a strategic issue in the 2030 SDGs agenda so that they must be a development priority in every country (Li et al., 2021). The variety of diseases in the NCD group is due to the fact that the disease pattern is strongly influenced by, among others, environmental changes, community behavior, demographic transition, technology, economy and socio-culture (Angreni et al., 2024). The increase in the burden of NCDs is in line with the increase in risk factors including increased blood pressure, blood sugar, body mass index or obesity, unhealthy diet, physical inactivity, and smoking and alcohol (Kanwal et al., 2024). In Indonesia, due to this disease pattern, there are many health problems, namely hypertension, diabetes mellitus and currently accompanied by high uric acid disease due to Indonesian culture that likes soy foods (tofu and tempeh) (Nurhayati et al., 2024).

NCD disease control efforts involve the role of the family in intervening with sick family members (Sharma et al., 2024). The family as the smallest unit in the community plays an important role in improving health status and quality of life, one of which is through behavior change towards healthy living behavior (Ferramosca et al., 2023). According to ElSayed et al. (2024), the family is tasked with recognizing family

health problems, deciding on appropriate health actions for the family, caring for family members who experience health problems, modifying the environment to ensure family health and utilizing health facilities around the family. Therefore, the role of the family is very important in controlling NCDs.

Family empowerment is a process or effort to foster family awareness and willingness to maintain and improve health status (Parisa et al., 2023). Increased knowledge and awareness of ways to maintain and improve health is the beginning of health empowerment which in turn creates a willingness or desire to carry out health actions so that families can carry out actions for healthy behavior (Wani et al., 2024). Through family empowerment, which is an effort of persuasion, it is hoped that families will take actions to maintain and improve their health (Rudnicka et al., 2020). The resulting health maintenance and improvement changes or actions are based on knowledge and awareness through the learning process, so that the behavior is expected to be long-lasting and persistent because it is based on awareness (Bi et al., 2023).

Sri Meranti Village, Rumbai Pesisir Subdistrict, Pekanbaru City is one of the working areas of Puskesmas Umbansari. This Kelurahan area is located along the banks of the Siak River and includes the periphery of the Pekanbaru Municipality. The people of this area are very vulnerable to various health problems, one of which is non-communicable diseases because the factors that cause lifestyle and the middle to lower economy make complex health problems. Based on the results of the assessment with Puskesmas Umban Sari, the average non-communicable diseases experienced by families in the community in Sri Meranti Village are hypertension (1,175 people), diabetes mellitus (492 people), gout (osteoarthritis) (361 people) the number of client visits to Puskesmas Umban Sari from the period January - December 2022. Although in Sri Meranti Village there is a Posbindu PTM, the low number of visits to Posbindu PTM makes this health problem cannot be overcome at the family level. Therefore, it is necessary to carry out this PTM Mandiri community empowerment activity (KesKam PTM) to be able to reduce the morbidity rate due to PTM in the Sri Meranti Village Area, Rumbai District Pekanbaru.

B. Research Methods

This activity was carried out using lecture and discussion (question and answer) methods on NCD health problems (hypertension, diabetes mellitus and gout) (Sasaki et al., 2024). Education was conducted twice, with the first meeting discussing the problems of hypertension and diabetes mellitus and actions to overcome them and the second meeting discussing the problem of gout and actions to overcome it.

The number of participants who attended was at the first meeting there were 35 participants and involved 3 posyandu cadres and also health workers from the puskesmas. And at the second meeting there was an increase to 42 participants who attended and also involved 3 posyandu cadres and also health workers from the health center.

The steps of the activity began with a survey of health problems based on the results of case studies of professional practice activities of community and family nursing students. Furthermore, socialization related to activities that will be carried out through sending partner letters to the Umban Sari Health Center and Sri Meranti village. Then the activity continued by approaching the residents. Next is the implementation of activities. At this stage, it was carried out in 2 stages, namely the first stage on September 23, 2023, the service team carried out health screening activities first and then carried out pre-tests related to NCDs hypertension and Diabetes Mellitus, then conducted education and continued with post-test activities. Furthermore, in the second stage, the service team conducted health screening and pre tests related to NCDs of gout, and continued with providing education and ended with the implementation of post-test activities.

C. Result and Discussion

1. Result

The community around this coastal area (close to the Siak River) has the largest population of adults \pm 650 people. And based on the results of interviews with health workers holding the NCD program at Puskesmas Umban Sari, health problems that are common in the Sri Meranti village community (Ns. Nurhayati, S.Kep) generally experience hypertension, diabetes and gout. This community service will be useful for the Puskesmas in helping to handle non-communicable disease problems. Empowering people who have an understanding of the handling and prevention of NCDs (hypertension, diabetes mellitus and gout).

The condition of the coastal area (Siak River) of Sri Meranti Village has 17 RW, and there are 5 RW around the Healthy House. The culture and lifestyle of the community around the FKp UNRI Healthy House is a fostered area of FKp UNRI and is also a place of practice for community and family professional practice students and an alert RW has been formed and there are also Posyandu for toddlers and the elderly. Active cadres and alert RWs that are still engaged in overcoming health problems.

In this service activity, the solution carried out for independent communities is to screen for detection of health problems, identify problems with education by utilizing the house yard by planting bay leaves, and can utilize or make traditional ingredients to overcome health problems, especially hypertension, uric acid and diabetes mellitus problems. The use of books (booklets) by the community as a medium for community learning. Bay leaf tea that can be made at any time by the community to overcome this NCD problem.

2. Discussion

The problem of non-communicable diseases that occur in coastal communities, especially in Sri Meranti, the majority of diseases experienced are hypertension, gout and diabetes mellitus. From the results of visit data at PKM Umban Sari in 2022, diseases that are often experienced by the community are hypertension, diabetes.

According to data from the Riau provincial health profile (Ahmed et al., 2023), the achievement of hypertension services is still low ($<10\%$) in Pekanbaru, due to the large target number of people with hypertension (29.1% of the population aged ≥ 15 years) and most people with hypertension without realizing they have hypertension as much as 70%. And the coverage data is still low in Pekanbaru because, the data recorded in the Health Office is only data on visits by hypertensive patients who visit the health center while patients who visit other health facilities have not been recorded. Therefore, this community service activity can be a preventive, promotive effort in an effort to overcome the problem of non-communicable diseases, namely hypertension, gout and diabetes mellitus. With early education strategies about health problems with the right educational media, the process of redemonstrating how to overcome health problems experienced by family members. With the involvement of family members is one of the effective strategies in overcoming health problems and also the participation of health-conscious communities can be the community of Sri Meranti village can be independent in overcoming health problems.

The achievement of the program objectives was measured through a pre test before the training was given and a post test afterwards with a prepared questionnaire. Thus, this training activity can be evaluated directly by comparing the average value of the pre test with the average value of the post test. The pre test results showed that the average knowledge of the community was 54.11 and the average value in the post test was 85.82 (the maximum value based on the questionnaire is 100). This shows that this activity is quite successful because with direct evaluation through the questionnaire given (pre test and post test) there is an increase in the number of community knowledge by 31.41.



Figure 1. Day 1 Pretest Activity



Figure 2. Day 2 Pretest Activity



Figure 3. Extension Activities

Evaluation of this activity was also carried out by collecting subjective data from the community before starting the training activities and after the activities were carried out. Based on this evaluation, before the training was conducted, participants stated that only a small proportion knew about hypertension, gout and diabetes mellitus appropriately. Thus, there is a need for education about the problems experienced by the community in general. During the activity, all community members around the healthy house seemed enthusiastic about participating in the activity with questions and answers during the explanation, and followed the series of activities from the beginning to the end of the activity.

The first activity was attended by 35 people and the second activity the following week by 42 people. The cadres involved were 3 Posyandu cadres and also health workers from the Sri Meranti Health Center holding the PTM program. The community was also given a leaflet for reading at home which contained information about PTM and how to treat it.

D. Conclusion

Community service activities on empowering independent communities in overcoming the problem of non-communicable diseases (NCDs), namely hypertension, diabetes mellitus and gout, which are carried out in 2x meetings in an effort to provide health promotion and conduct health checks and demonstrate how to handle health problems due to hypertension, diabetes mellitus and gout. The first activity was carried out on September 23, 2023 and the second activity was carried out on September 30, 2023. The educational activities carried out obtained quite good results, namely residents who were given education experienced an increase in knowledge of 31.41.

References

- Ahmed, M. M., Naji, A. B., & Younis, N. M. (2023). Efficacy of an educational program based on health belief model to enhancing weight control behaviors among employees in University of Mosul: a randomized controlled trial. *Bionatura*, 8(3), 1–10. <https://doi.org/10.21931/RB/2023.08.03.28>
- Angreni, W. O. N., Rahagia, R., Setyawati, A., Kamaruddin, Muh. I., & Suprpto, S. (2024). Community participation in clean and healthy living as an effort to improve the quality of health. *Abdimas Polsaka*, 3(1), 1–6. <https://doi.org/10.35816/abdimaspolsaka.v3i1.60>
- Bi, C., Xu, H., Yu, J., Ding, Z., & Liu, Z. (2023). Botanical characteristics, chemical components, biological activity, and potential applications of mangosteen. *PeerJ*, 11, e15329. <https://doi.org/10.7717/peerj.15329>
- Chironda, G., Jarvis, M. A., & Brysiewicz, P. (2023). Family-Focused Nursing Research in WHO Afro-Region Member States: A Scoping Review. *Journal of Family Nursing*, 29(2), 136–154. <https://doi.org/10.1177/10748407221132018>
- ElSayed, N. A., Aleppo, G., Bannuru, R. R., Beverly, E. A., Bruemmer, D., Collins, B. S., Darville, A., Ekhlaspour, L., Hassanein, M., Hilliard, M. E., Johnson, E. L., Khunti, K., Lingvay, I., Matfin, G., McCoy, R. G., Perry, M. Lou, Pilla, S. J., Polsky, S., Prahalad, P., ... Gabbay, R. A. (2024). 5. Facilitating Positive Health Behaviors and Well-being to Improve Health Outcomes: *Standards of Care in Diabetes—2024*. *Diabetes Care*, 47(Supplement_1), S77–S110. <https://doi.org/10.2337/dc24-S005>
- Ferramosca, F. M. P., De Maria, M., Ivziku, D., Raffaele, B., Lommi, M., Tolentino Diaz, M. Y., Montini, G., Porcelli, B., De Benedictis, A., Tartaglini, D., & Gualandi, R. (2023). Nurses' Organization of

- Work and Its Relation to Workload in Medical Surgical Units: A Cross-Sectional Observational Multi-Center Study. *Healthcare*, 11(2), 156. <https://doi.org/10.3390/healthcare11020156>
- Kanwal, J., Nawaz, M., Noor, W., Khan, M., Javaid, H., Ashraf, A., Shafiq, N., & Qureshi, A. A. (2024). *Ethnobotanical and Pharmacological Significance of Celery Plants With Biogenic Synthesis of Nanomaterials* (pp. 57–75). <https://doi.org/10.4018/979-8-3693-6105-4.ch004>
- Li, S., Hu, Z., & Zhang, J. (2021). Effects of Natural Convalescent Factors Combined with Motor Intelligence Management on Patients' Blood Pressure. *Journal of Healthcare Engineering*, 2021, 1–7. <https://doi.org/10.1155/2021/2917226>
- Mancia, G., Cappuccio, F. P., Burnier, M., Coca, A., Persu, A., Borghi, C., Kreutz, R., & Sanner, B. (2023). Perspectives on improving blood pressure control to reduce the clinical and economic burden of hypertension. *Journal of Internal Medicine*, 294(3), 251–268. <https://doi.org/10.1111/joim.13678>
- Nurhayati, I., Hidayat, A. R., Yuniarti, T., & Widiyanto, A. (2024). The Effect of Layer Leaves on Reducing Uric Acid in the Elderly: A Systematic Review. *Indonesian Journal of Global Health Research*, 6(1), 271–278. <https://doi.org/10.37287/ijghr.v6i1.2740>
- Parisa, N., Kamaluddin, M., Saleh, M., & Sinaga, E. (2023). The inflammation process of gout arthritis and its treatment. *Journal of Advanced Pharmaceutical Technology & Research*, 14(3), 166. https://doi.org/10.4103/japtr.japtr_144_23
- Rudnicka, E., Napierała, P., Podfigurna, A., Męczekalski, B., Smolarczyk, R., & Grymowicz, M. (2020). The World Health Organization (WHO) approach to healthy ageing. *Maturitas*, 139, 6–11. <https://doi.org/10.1016/j.maturitas.2020.05.018>
- Sasaki, N., Ueno, Y., Ozono, R., Yoshimura, K., Nakano, Y., & Higashi, Y. (2024). Association of serum uric acid levels with blood pressure and the incidence of hypertension in the middle-aged and elderly populations. *Journal of Hypertension*, 42(2), 292–300. <https://doi.org/10.1097/HJH.0000000000003597>
- Sharma, K., Rajan, S., & Nayak, S. K. (2024). Water pollution: Primary sources and associated human health hazards with special emphasis on rural areas. In *Water Resources Management for Rural Development* (pp. 3–14). Elsevier. <https://doi.org/10.1016/B978-0-443-18778-0.00014-3>
- Wani, M. D., Dada, Z. A., & Shah, S. A. (2024). The impact of community empowerment on sustainable tourism development and the mediation effect of local support: a structural equation Modeling approach. *Community Development*, 55(1), 50–66. <https://doi.org/10.1080/15575330.2022.2109703>

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